**PACKAGE ID -** 000219MLTPL06 TMVOCV1.0

**KWIC TITLE -** Unsaturated Groundwater and Heat Transport
   Model.

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**LIMITATION CODE** -COPY        **AUDIENCE CODE -** UNL

**COMPLETION DATE -** 04/01/2002  **PUBLICATION DATE -** 04/01/2002

**DESCRIPTION -** TMVOC is a simulator for multicomponent, multiphase,
   nonisothermal flows of water, soil gas, and several volatile
   organic chemicals (VOCs). It is based on the M2NOTS-code developed
   by Adeyinka Adenekan as part of his PhD project at UC Berkeley
   (Adenekan, 1992). TMVOC is written in standard FORTRAN 77 and
   operates within the freamework of TOUGH2, Version 2.0 (T2V2; Pruess
   et al., 1999). The code consists of two modules (groups of
   routines) named *t2fm.f* and *emvoc.f* that must be linked to
   several standard T2V2 modules.

**PACKAGE CONTENTS -** Media Directory; Software Abstract; READ.ME File;
   Media Includes User Guide (LBNL-49375), Source Code, Auxiliary
   Materials, Compilation Instructions, Linking Instructions, Sample
   Problem Input Data, Installation Instructions;

**SOURCE CODE INCLUDED? -** Yes

**MEDIA QUANTITY -** 1 CD ROM

**METHOD OF SOLUTION -** TMVOC input files are very similar to T2VOC input
   files. Slight revisions in T2VOC input files are required in data
   blocks CHEMP for VOC parameters. User options selectable by means
   of the parameter NKIN are available to initialize a TMVOC run from
   T2VOC-stuly initial conditions, with automatic internal conversion
   input data prior to execution.

**COMPUTER -** MLT-PLTFM

**OPERATING SYSTEMS -** Operating System-Independent (Requires 64 bit
   compiler to provide double precision arithmetic)

**PROGRAMMING LANGUAGES -** FORTRAN 77

**SOFTWARE LIMITATIONS -** Storage requirements increase with number of
   grid blocks (mesh size). Maximum problem dimensions can be
   specified through PARAMETER statements in the main program, or
   through an INCLUDE file.

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**SOURCE CODE AVAILABLE (Y/N) -** Y

**UNIQUE FEATURES -** Runs interrelated with TOUGH2 V2.0.

**RELATED SOFTWARE -** TOUGH2 V2.0, T2VOC.

**OTHER PROG/OPER SYS INFO -** TMVOC is designed for applications to
    contamination problems that involve hydrocarbon fuel or organic
    solvent spills in saturated and unsaturated zones. It can model
    contaminant behavior under "natural" environmental conditions, as
    well as for engineered systems, such as siol vapor extraction,
    groundwater pumping or stem-assisted source remediation.

**HARDWARE REQS -** See requirements in TOUGH2 V2.0 and in LBNL-49375, the
    TMVOC Users Guide (available on the media).

**TIME REQUIREMENTS -** See TOUGH2 V2.0 requirements.

**REFERENCES -** K. Pruess and A. Battistelli. TMVOC, A Numerical Simulator
    for Three-Phase Non-isothermal Flows of Multicomponent Hudrocarbon
    Mixtures in Saturated-Unsaturated heterogeneous Media, Lawrence
    Berkeley National Laboratory Report LBNL-49375, January 2002.

**ABSTRACT STATUS -** Released AS-IS 06/06/2002.

**SUBJECT CLASS CODE -** HR

**KEYWORDS -**
    ENVIRONMENT
    TWO-PHASE FLOW
    WATER POLLUTION
    GASEOUS WASTES

**SPONSOR -** DOE/DP

**PACKAGE TYPE -** AS - IS